

**Notice of Allowability**

Application No.

10/553,319

Examiner

Hemang Sanghavi

Applicant(s)

PEER ET AL

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to reply filed on July 27, 2007.
2. ☒ The allowed claim(s) is/are 1-60.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date See Continuation Sheet
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Hemang Sanghavi/  
Primary Examiner  
Art Unit: 2874

Continuation of Attachment(s) 3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 01/17/2006, 07/16/2007.

## **DETAILED ACTION**

### ***Election/Restrictions***

In response to the applicant's arguments filed on July 27, 2007, the restriction requirement hereby withdrawn.

### ***Information Disclosure Statement***

The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) filed on 01/17/05 and 07/16/07 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

## **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: The prior art fails to disclose or suggest the claimed method for automatically generating a key and conjugate key including the steps of applying a down conversion process to pump input light to produce down converted broadband signal and idler fields that are complex conjugates to each other and the signal and idler fields serving as the key and its conjugate. Nor does the prior art disclose or suggest the optical multiplexer system including a light source arrangement for producing N optical channels each represented by down converted signal and idler fields that are complex conjugates to each other and represent key and its conjugate fields. The prior art fails to disclose or suggest the claimed demultiplexer including a filter for spatially separating down converted signal and idler fields, the signal and fields being indicative of key and its conjugate of the specified channel and a phase affecting utility as claimed in claim 48. The prior art fails to disclose or suggest the claimed method for producing broadband down converted

light fields including the steps of passing light through a resonant non-linear optical arrangement and affecting phases of down converted light fields while propagating through the arrangement to reduce an effort of up conversion for broadband oscillation of the down converted fields. Nor does the prior art disclose or suggest the claimed source including a resonant non-linear optical arrangement and a phase shaper arrangement as claimed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoo discloses an optical code division multiple access network including a reconfigurable spectral phase coding. Cincotti discloses optical device for generating and processing optical codes. However this reference is not available as prior art due to its publication date.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is 571-272-9955. The examiner can normally be reached on Mon-Fri, 9:00 AM -5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hemang Sanghavi/  
Primary Examiner  
Art Unit 2874

HS